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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/525,424

09/07/2005

Dirk Muhlhoff

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EXAMINER

CRANDALL, LYNSEY P

ART UNIT

PAPER NUMBER

3769

MAIL DATE

DELIVERY MODE

01/04/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,424	<b>Applicant(s)</b> MUHLHOFF ET AL.	
	<b>Examiner</b> LYNSEY CRANDALL	<b>Art Unit</b> 3769	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 1-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/23/2005, 9/7/2005</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 32-41 in the reply filed on 10/2/2009 is acknowledged.
2. Claims 1-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/2/2009.

### ***Claim Objections***

3. Claim 32 is objected to because of the following informalities: Lines 7 and 8 currently read "thus allowing determination of the position of boundaries, in the tissue inclusions in the tissue or both". The examiner believes it should read "thus allowing determination of the position of boundaries in the tissue inclusions, in the tissue or both". Appropriate correction is required.

### ***Drawings***

4. The drawings are objected to because of their poor quality, specifically they contain shading that makes them blurry and some of the hand-written reference numerals are difficult to distinguish. Furthermore, Fig. 19 has two reference numerals 77 pointing to two different elements in the figure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the

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appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 32-33 and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 6,454,761 to Freedman.

7. Freedman discloses a device and method for measuring a transparent or semi-transparent tissue. This invention utilizes precise three-dimensional imaging capability of low coherence interferometry to detect cornea tissue to permit determination of the exact location and extent of a plurality of incisions necessary to correct cornea curvature. The three-dimensional imaging capability also permits precise control of

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ablating laser in forming the incisions at the location and extent previously determined (Col 6, lines 5-12).

8. Freedman discloses a device comprising: a source of laser radiation (laser diode 68, Fig. 3), a focusing unit (lenses 86 and 88, Fig. 3), a detector unit (photodetector 98, Fig. 3) and a control unit (processor 48, Fig. 3). The processor detects a signal from the photodetector that represents the interferogram. Processor can be a computer.

Processor can include a Fourier transformer as shown. Fourier transformer transforms the interferogram, filters the resulting reflection spectrum and subjects the filtered reflection spectrum to reverse transforming to provide a spatialgram. Processor compares spatialgram data to data representing a standard of improved visual acuity to construct an ablating plan. Processor can construct a virtual or real time display three dimensional image of the cornea film from the spatialgram and construct an ablating plan by comparing the constructed image to a representation of a standard of improved acuity. Processor controls ablating laser in accordance with the ablating plan (Col 5, lines 22-35)

9. Freedman discloses the movement of laser beams incrementally along an axis of the tissue; this is interpreted as a deflection unit or scanner (Col 7, lines 37-50 and Claim 6) that sequentially focuses laser radiation onto a plurality of focal points by the deflecting unit and focusing unit. This invention provides a sequence of detection that can be used to evaluate the thickness and the boundary state of each layer of the cornea or other biological tissue (Col 4, lines 33-35).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 34-35 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,454,761 to Freedman as applied to claims 32 and 37 above, and further in view of U.S. 6,613,041 to Schröder.

13. Freedman is discussed above, but is silent with regards to only one laser source, an energy reducer and common optics. Schröder discloses a system for determining the surface shape of the eye utilizing interferometry. The method and device presented are therefore suitable in particular for the combination of alternately measuring the form of cornea 8a and its operative treatment, which is advantageously performed with the same radiation source (1, Fig. 1), usually a UV laser. The results of the determination of

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the corneal form can then be used immediately in the following operation step in order to control and regulate the removal of cornea by the laser. During a subsequent measuring phase the result of the preceding operative step can be monitored immediately and the next operation step coordinated with it. This alternating process is preferably controlled automatically by a computer. During the use of a laser beam that is capable of removing cornea 8a over a large area, at least one energy reducer (intensity attenuator 15; shown in dotted lines in FIG. 1) is inserted into the beam path of excitation radiation 2, that is, between radiation source 1 and cornea 8a, during the measuring of the corneal surface in order to protect cornea 8a. This intensity attenuator is removed out of the beam path during the operation phases. The inserting and removal of intensity attenuator 15 into and out of the beam path are preferably performed in a computer-controlled manner (Col 9, line 55 to Col 10, line 10).

14. Since only one laser source (1, Fig. 1) is used for both the treatment and illumination/measurement beams, the optics are common to both beams. It is especially preferable if the radiation source for determining the surface form of the biological tissue and that for the operative treatment of the tissue are identical. In this manner, a compact and relatively inexpensive device for determining the tissue topology and the operation of the tissue can be realized (Col 4, lines 55-60). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the device taught by Freedman to include only one laser source for both the treatment and illumination beams with an energy reducer to distinguish between the two types of beams as taught by Schröder in order to provide a compact, inexpensive device for both measurement and treatment of the eye.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LYNSEY CRANDALL whose telephone number is (571)270-7035. The examiner can normally be reached on Monday to Thursday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hank Johnson can be reached on (571)272-4768. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LYNSEY CRANDALL/  
Examiner, Art Unit 3769

/Henry M. Johnson, III/  
Supervisory Patent Examiner, Art  
Unit 3769

12/23/2009